

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) An off-shore drilling installation comprising:
a guide device disposed on the sea bottom;
at least one drilling riser extending from a floating support to said guide device;
a drill string with a drilling tool fitted at an end thereof, and configured to pass through
said drilling riser and said guide device, to said sea bottom;

said guide device having a telescopic guide pipe comprising pre-assembled coaxial
telescopic guide elements including at least an outer guide element and an inner guide element,
said telescopic guide pipe being extendable from a retracted position wherein substantially all of
said telescopic guide elements are disposed substantially within said outer guide element to a
deployed position wherein said inner guide element is disposed beyond said outer guide element,
said inner guide element being fitted at an end thereof with breakup means for breaking up the
ground suitable for burying said telescopic guide pipe in the sea bottom and sliding said
telescopic guide elements outwards, thereby enabling said drilling tool to be guided more deeply
into the sea bottom.

2. (previously presented) A drilling installation according to claim 1, characterized in that
said inner guide element has a diameter substantially equal to the diameter of said drilling riser.

3. (previously presented) A drilling installation according to claim 1, characterized in that
said breakup means includes a multiply-perforated capsule configured to enable at least one of

water and mud to be jetted into the sea bottom by being injected into said capsule under very high pressure.

4. (previously presented) A drilling installation according to claim 1, characterized in that said guide pipe has at least three coaxial telescopic guide elements.

5. (previously presented) A drilling installation according to claim 1, characterized in that each of said telescopic coaxial guide elements has a length of from about 50 m to about 300 m, and wherein the length of said guide pipe in said deployed position is between about 150 m and about 600 m.

6. (currently amended) A drilling installation according to claim 1, wherein said drilling riser is progressively deflectable from a substantially vertical position at said floating support to a position that is substantially tangential to the horizontal at the sea bottom, said drilling being performable from said floating support via said drilling riser and said guide device in such a manner that a borehole in the sea bottom is begun at a given angle of inclination α relative to the horizontal in the range of from about 5° to about 60° ; and

wherein said telescopic guide pipe includes:

- a front end configured to rest substantially horizontally on the sea bottom;
- a curved intermediate portion buried in the subsoil of the sea bottom with a radius of curvature of no less than about 500 m; and
- a rear portion that is substantially linear and buried in the subsoil of the sea bottom at substantially said given angle of inclination α ;

at least one of said telescopic guide pipe and said outer ~~telescopic~~ guide element cooperating with controlled burying means for burying said outer guide element in the sea bottom while said retracted telescopic guide pipe is being towed along the sea bottom from its front end, starting from an initial position in which said retracted telescopic guide pipe rests entirely on the sea bottom in a substantially horizontal position, to a buried position in the subsoil of the sea bottom.

7. (previously presented) A drilling installation according to claim 6, characterized in that said telescopic guide pipe has a length of between about 100 m to about 600 m, and said angle of inclination α is in the range of from about 10° to about 60°.

8. (previously presented) A drilling installation according to claim 6, characterized in that said front end is engaged in a baseplate including a load and rests on a front soleplate such that said baseplate maintains said front end substantially horizontal to the sea bottom while said drilling installation is being towed.

9. (currently amended) A drilling installation according to claim 6, characterized in that said controlled burying means comprise:

- a front soleplate placed on the sea bottom, said front soleplate supporting said front end and being secured to said front end;

- at least one intermediate soleplate supporting at least one of said curved intermediate portion and said rear portion and being secured thereto, said at least one intermediate soleplate having a surface area that is smaller than that of said front soleplate, said at least one

intermediate soleplate being distributed along said intermediate portion and said rear portion ~~and having a surface area that decreases relative to that of said front soleplate on approaching said rear end;~~ and

- an anchor connected to said rear portion and suitable for becoming buried in the sea bottom when traction is applied to said front end.

10. (currently amended) A drilling installation according to claim 6, characterized in that said controlled burying means comprise:

at least one deflector secured to ~~one of~~ said outer pipe guide element in one of said curved intermediate portion and said rear portion of said retracted telescopic guide pipe; and ~~plane surfaces; and~~

wherein said deflector has plane surfaces ~~and said deflector that~~ are inclined relative to a horizontal axial plane of said guide pipe when said guide pipe is in a horizontal position on the sea bottom, said ~~deflector~~ plane surfaces being inclined at an angle in such a manner as to cause said retracted telescopic guide pipe to become buried when it is towed from said substantially horizontal initial position to said buried position.

11. (currently amended) A drilling installation according to claim 10, further comprising a plurality of deflectors distributed along the outer pipe guide element of said telescopic guide pipe, said plurality of deflectors being inclined at respective angles that become smaller for said deflectors that are closer to said front end.

12. (previously presented) A drilling installation according to claim 6, characterized in that said controlled burying means comprise:

- secondary pipes for jetting fluid, said secondary pipes being secured to said telescopic guide pipe, and extending parallel thereto along the underface thereof; and
- said secondary pipes having a smaller diameter than that of said telescopic guide pipe and having perforations in their underfaces for permitting a fluid to be expelled towards the sea bottom when said secondary pipes are fed by said fluid under pressure.

13. (previously presented) A drilling installation according to claim 12, characterized in that said secondary pipes have front and rear ends that are connected to the front and rear ends, respectively, of said retracted telescopic guide pipe, communicating with said front and rear ends of said retracted telescopic guide pipe in such a manner as to make it possible to feed said secondary pipes using a single feed pipe connected to said front end of said guide pipe.

14. (currently amended) A drilling installation according to claim ~~[[1]]~~ 8, wherein said guide device comprises:

- a rigid outer top structure covering and holding rectilinear said retracted telescopic guide pipe when it is substantially horizontal and rests on the sea bottom;
- said outer top structure presenting a longitudinal central opening in its bottom face enabling said retracted telescopic guide pipe to become buried in the sea bottom when it is towed;
- at least one connection connecting at least the rear portion of said outer ~~telescopic pipe~~ guide element of the telescopic guide pipe to said outer top structure in such a manner as to limit

the depth to which it may be buried in the sea bottom so as to limit the radius of curvature of said curved intermediate portion of the telescopic guide pipe;

- said outer top structure resting on the ground of the sea bottom; and
- said outer structure being secured to said baseplate in which said front ~~portion~~ end of the telescopic guide pipe is engaged.

15. (currently presented) A drilling installation according to claim 14, characterized in that it has a plurality of flexible connections distributed along the outer ~~telescopic pipe~~ guide element of said telescopic guide pipe and presenting lengths that become longer for connections that are closer to the rear ~~end~~ portion of the telescopic guide pipe and of lengths that are sufficient so that said curved intermediate portion has a predetermined radius of curvature and said rear portion is substantially linear.

16. - 24. (canceled)

25. (currently amended) A method of drilling off-shore using a drilling installation that includes:

- a guide device disposed on the sea bottom;
- at least one drilling riser extending from a floating support to said guide device;
- a drill string having a drilling tool fitted at an end thereof, and configured to pass through said drilling riser and said guide device to said sea bottom;
- said guide device having a telescopic guide pipe which comprises pre-assembled coaxial telescopic guide elements that include at least an outer guide element and an inner guide element,

said telescopic guide pipe being extendable from a retracted position wherein said inner guide element is disposed substantially within said outer guide element to a deployed position wherein said inner guide element is disposed beyond said outer guide element, said inner guide element being fitted at an end thereof with breakup means for breaking up the sea bottom to facilitate burying said telescopic guide pipe in the sea bottom and for sliding said telescopic guide elements outwards, thereby enabling said drilling tool to be guided more deeply into the sea bottom;

wherein the method comprises the steps of:

burying said guide device in the sea bottom while extending said ~~outer~~ inner guide element of said telescopic guide pipe beyond said outer guide element;

deploying said drill string in co-operation with said drilling tool ~~and columns of tubing~~ via said drilling riser and said guide device buried in the sea bottom; and

drilling a borehole with said drilling tool.

26. (currently amended) A method of drilling according to claim 25, further comprising the steps of:

deflecting said drilling riser progressively from a substantially vertical position at said floating support to a position that is substantially tangential to the horizontal at the sea bottom, said outer guide element co-operating with controlled burying means, said controlled burying means being suitable for burying said outer guide element from an initial position wherein it rests entirely on the sea bottom, to a controlled buried position in the subsoil of the sea bottom, while said telescopic guide pipe is being towed;

placing said telescopic guide pipe in the retracted position in an initial position where it rests substantially horizontally and in rectilinear manner on the sea bottom; and

towing ~~the~~ a front end of said telescopic guide pipe in the axial longitudinal direction of said guide pipe, from said initial position to said buried position wherein said ~~outer telescopic pipe element of said~~ telescopic guide pipe comprises in succession:

- a front end resting substantially horizontally on the sea bottom;
- a curved intermediate portion buried in the subsoil of the sea bottom with a radius of curvature of no less than substantially 500 m; and
- a rear portion that is substantially linear and buried in the subsoil of the sea bottom at a given angle of inclination α relative to the horizontal, lying in the range of from about 5° to about 60°;

deploying said telescopic guide pipe with said breakup means while sliding said telescopic guide elements to be progressively buried in the sea bottom;

deploying said drill string in co-operation with said drilling tool ~~and columns of tubing~~ via said drilling riser and said guide device buried in the sea bottom; and

drilling a borehole with said drilling tool so that said angle of inclination α is in the range of from about 5° to about 60° relative to the horizontal when said borehole is begun.

27. (currently amended) A method according to claim 26, characterized in that said controlled burying means comprise:

- a front soleplate placed on the sea bottom for supporting said front end of said telescopic guide pipe and being secured thereto;

- a plurality of intermediate soleplates supporting at least one of said curved intermediate portion and said rear portion and secured thereto, said plurality of intermediate soleplates having a surface area that is smaller than that of said front soleplate, said plurality of said intermediate soleplates being distributed along said intermediate portion and said rear portion having a surface area that becomes smaller relative to said front soleplate on approaching said rear ~~end~~ portion; and

- an anchor connected to said rear portion and suitable for becoming buried in the sea bottom when traction is applied to said front end, and

wherein the method further comprises the step of:

towing the front end of said retracted telescopic guide pipe until said intermediate soleplates are buried in the sea bottom at increasing depth on coming closer to said rear end of said guide pipe so as to obtain a radius of curvature of said telescopic pipe guide of at least substantially 500 m.

28. (currently amended) A method according to claim 26, characterized in that said controlled burying means comprise at least one deflector secured to said outer ~~telescopic pipe~~ guide element of said telescopic guide pipe in at least one of said intermediate portion and said rear portion of said retracted telescopic guide pipe, said controlled burying means including plane surfaces, and said plane surfaces and said deflector being inclined relative to a horizontal axial plane of said guide pipe when said guide pipe is in a horizontal position on the sea bottom, said deflector being inclined at an angle in such a manner as to cause said retracted telescopic guide pipe to become buried when it is towed from said substantially horizontal initial position to said buried position in the sea bottom; and

the method further comprises the step of:

towing the front end of said retracted telescopic guide pipe until said deflectors are buried in the sea bottom in a horizontal position so as to obtain a radius of curvature of said telescopic pipe guide of at least substantially 500 m.

29. (previously presented) A method according to claim 26, characterized in that said controlled burying means comprise:

- secondary pipes for jetting fluid, said secondary pipes being secured to said telescopic guide pipe, and extending parallel thereto along the underface thereof;

- said secondary pipes being of smaller diameter than said telescopic guide pipe and having perforations in their underfaces for enabling a fluid to be expelled towards the sea bottom when said secondary pipes are fed by said fluid under pressure; and

the method further comprises the steps of:

injecting gas under pressure into said secondary pipes when it is desired to tow said guide pipe on the sea bottom; and

injecting a fluid under pressure into said secondary pipes when it is desired to bury said guide pipe in the sea bottom.

30. (currently amended) A method according to claim 26, characterized in that said guide device comprises:

- a rigid outer top structure covering and holding rectilinear said retracted telescopic guide pipe when it is substantially horizontal and rests on the sea bottom;

- said outer structure presenting a longitudinal central opening in its bottom face enabling said retracted telescopic guide pipe to become buried in the ground when it is towed;

- at least one connection connecting at least the rear portion of the ~~outer telescopic pipe element of the~~ telescopic guide pipe to said outer structure in such a manner as to prevent it from becoming buried beyond a given depth so as to limit the radius of curvature of said curved intermediate portion;

- said outer top structure resting on the ground of the sea bottom; and

- said outer top structure being secured to said baseplate in which said front portion of the guide pipe is engaged; and

the method further comprises the step of:

towing the front end of said retracted telescopic guide pipe and said rigid outer top structure secured to said guide pipe until said at least one connection prevents at least said rear portion of said retracted telescopic guide pipe from becoming buried deeper so as to obtain a radius of curvature of said telescopic pipe guide of at least substantially 500 m.

31. (previously presented) The drilling installation of claim 5, wherein each of said telescopic coaxial pipe elements has a length of from about 100 m to about 200 m.

32. (previously presented) The drilling installation of claim 5, wherein the length of said guide pipe in said deployed position is between about 200 m and about 300 m.

33. (previously presented) The drilling installation of claim 6, wherein said angle of inclination α lies in the range of from about 25° to about 45°.

34. (previously presented) The drilling installation of claim 7, wherein the length of said telescopic guide pipe is between about 250 m to about 450 m when in said retracted position.

35. (previously presented) The drilling installation of claim 7, wherein said angle of inclination α of said guide pipe is in the range of from about 25° to about 45°.

36. (previously presented) The method of claim 26 wherein the radius of curvature is less than 1000 m.